

EXHIBIT B

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Opec Indecision Reflects Divisions Over Strategy

A slide in oil prices and headlines railing about “Opec discord” should have been no great surprise to Opec after its inconclusive Dec. 4 meeting. By abandoning any production target, the group appeared to shed any last vestige of its former mission to control production and stabilize prices, reviving accusations that the organization is now “dead” or “irrelevant.” But that reading misses two important points. Firstly, Opec’s indecision reflects its uncertainty over the outlook for 2016 — primarily the expected revival in Iranian crude exports, but also the performance of US shale. Secondly, Opec is still grappling with the issue of long-term strategy, with opinion deeply divided, even within delegations. Some still foresee an eventual return to a modified form of market management through output adjustments, while others seemingly accept that, with the seismic shift caused by US shale, the old quota system — but not Opec itself — is dead. While the failure to set even a nominal output target was a surprise, delegates could reasonably argue that there was little to be gained in agreeing an output figure that might be rendered meaningless within months by Iran, which has pledged to lift exports by 500,000 barrels per day soon after sanctions are lifted. Many Opec delegates believe most or all of that could materialize in the first half of next year, while opinions are also divided over US shale, with some delegates thinking its long-awaited collapse in the face of low oil prices could finally come in the first six months of 2016. As for output cuts, while it was simply too soon to change course from a market-led strategy which will clearly need more than a year to work, Saudi Arabia’s hints of receptivity to an eventual output cut — albeit with onerous conditions attached — deflected attention on to Iran, which refused to countenance any output restraint (PIW Dec. 7’15).

(Please turn to p.4)

Opec Accelerates Brent’s Race to The Bottom

Benchmark Brent crude oil prices fell more than 10%, and briefly dipped below \$40 per barrel, in the days following Opec’s inconclusive Dec. 4 meeting, which in failing to set even a nominal group output ceiling merely formalized what has been reality for the past year — that Opec members, led by Saudi Arabia and its Mideast Gulf allies, are pumping without restraint in a quest to retake market share from non-Opec. The slump in Brent reflects the prospect of continued high production from Opec, Iran’s looming post-sanctions export revival, and further supply resilience from non-Opec. But there is also nervousness over demand and stocks — with the Northern Hemisphere winter expected to be mild and storage approaching operational limits, Brent could soon be testing new lows. As the market digested the outcome of the Opec meeting, Iran announced that it expected Western sanctions to be lifted in January and to start increasing exports immediately, potentially by as much as 500,000 barrels per day. For Iran to penetrate an already saturated market, it would need to discount its crude, putting further pressure on prices. Analysts’ technical trading charts signal new targets that could see Brent testing the \$36.25/bbl low seen during the 2008-09 slump, when US benchmark West Texas Intermediate (WTI) fell as low as \$32.70/bbl. Could things get even worse this time around? After the Opec gathering, Goldman Sachs said it expected oil prices to remain “lower for longer,” with a risk they could fall as low as \$20/bbl.

Any upside for Brent seems limited at the moment. Rising global oil demand has been soaking

up much of the surplus supply, but if the Northern Hemisphere winter proves as mild as many expect, the resulting sluggish demand could force refiners to throttle back, pushing even more oil into storage in the first quarter. With Atlantic Basin storage tanks close to operational capacity, more of that oil will have to move into floating storage, but for that play to work, the contango in crude markets will have to deepen, dragging prompt prices down even further. That weakness in physical crude could be amplified by the positions taken in paper markets by speculators (PIW Dec.7'15). Meteorologists are anticipating a particularly strong El Nino effect in the months ahead, which could deliver disruption in the form of floods, but also generally milder weather, well into the first quarter in high-oil consumption areas of the US and Canada, and possibly even Europe as well. Demand will also be affected by the roughly 1 million b/d of US Gulf Coast refining capacity heading into maintenance from January. On the supply side, the precarious finances of many small US producers mean they may look to maximize oil sales before they close their accounts for 2015. This oil will need to find a home, but there is dwindling space left in storage. China and India could offer some relief through their strategic stockpiles, but China is understood to have relatively little strategic storage space available, at least in the short term (PIW Nov.23'15).

How long prices remain weak comes down in large part to Opec and its own evolving approach to long-term strategy. The fundamental outlook for 2016 suggests there will still be a healthy supply surplus, but possibly more room for Opec oil if demand growth outpaces gains in non-Opec output. If Opec stays true to its current Saudi-led strategy, it will decline the opportunity to support prices by restraining production, and will keep pumping to consolidate increases in market share as high-cost non-Opec production falters. That promises to keep prices depressed (PIW Nov.23'15). PIW estimates show a supply surplus of 1.8 million b/d in the first half of 2016 and 1.6 million b/d in the second half. The question is whether the world can absorb all that oil. And even if it can, that will simply add to the inventory overhang that will still need to be burned off once supply and demand are eventually back in balance. That could take well into 2017 or even 2018 — long enough, perhaps, for Opec to have second thoughts about its current “market share” strategy, or for some non-Opec producers to answer Opec’s call for cooperation on output cuts.

Crude Oil Trade: Saudis Fight to Win Back Sales

After a 2014 in which Saudi Arabia saw its crude exports plunge, trends in international crude oil trade so far in 2015 show the kingdom is fighting back, with its exports up by more than 540,000 barrels per day in the first half of the year from the 6.91 million b/d low seen in the final six months of last year, *Petroleum Intelligence Weekly's* latest analysis of global crude import and export trends shows. The Saudi surge has been part of a more general expansion in crude trade — volumes were up by 1.5 million b/d in the first six months of this year compared with last year's second half, with Russia, Canada and Iraq among the other producers enjoying substantial export increases. So from the Saudi point of view, at least, Opec's market share strategy seems to be working (p9). Saudi crude exports had dropped by more than 700,000 b/d over 2014 as a whole, with sales to the US alone accounting for about 500,000 b/d of that decline, courtesy of surging tight oil output (PIW Jun.8'15). The recovery in Saudi Arabia's crude exports suggests that in volume terms at least, the Opec strategy it initiated a little over a year ago of maintaining output and defending market share has worked in restoring its market position (PIW Dec.7'15).

While Saudi Arabia has scored gains in crude sales with most of its trading partners this year, including even the US, the lion's share of its gains have come from four key Asian countries — China, India, Japan and South Korea. Saudi sales to these nations were up by more than 320,000 b/d in the first half of this year compared with the previous six months. These markets have seen the strongest demand growth, but also the most intense competition between supplies, with Russia and Iraq also substantially increasing sales. The rise in Iraqi exports in the first half of this year had been widely anticipated and was also supported by increased sales to Europe. Much like Saudi Arabia, Russia saw its crude exports rebound sharply in the first quarter of 2015 following a slump in the second half of last year, helped by a big jump in sales to China. Virtually all of the 400,000 b/d increase seen in Canada's crude exports in

the first six months of 2015 was attributable to sales into the US — Canada now accounts for 43% of US crude imports, up from a level of just 34% as recently as the second half of 2013.

Looking ahead to 2016, the expected post-sanctions revival in Iranian crude exports could set the scene for a rerun of this year, with intense competition between suppliers in key markets and further downward pressure on prices. Iran is eyeing an eventual 1 million b/d increase in crude exports, almost double the gains Saudi Arabia delivered in the first half of this year. The lifting of sanctions should create scope for Iran to revive sales to previously off-limits customers in Europe, but like Saudi Arabia, Iraq and Russia, it is also expected to focus on big growth markets in Asia. This will put Iran on a collision course with those rival suppliers, which may find it hard to maintain the gains made so far this year without driving oil prices lower still in 2016.

CCS Overlooked, Underfunded in Climate Debate

Alongside the promotion of renewable energy and greater energy efficiency, carbon capture and storage (CCS) is the third leg in global policymakers' strategy for tackling climate change. But CCS is not taking off in the way it needs to if it is to make a difference in reducing greenhouse gas (GHG) emissions, due to a lack of policy and financial support from government. Just 15 projects are operational worldwide, mainly linked to enhanced oil recovery (EOR) schemes, and while another seven will come on line over the next 18 months, around 40 CCS projects have been shelved or canceled over the past five years. In the UN climate talks taking place in Paris over the past two weeks, moreover, CCS has merited barely a mention. Individual country pledges on emissions reductions presented in Paris emphasize renewables and energy efficiency, but say little about CCS, which should be a "critical tool" in tackling climate change, but which is shrouded in "skepticism and doubt," the International Energy Agency (IEA) has noted. The world's 15 operational CCS schemes capture 28 million tons per year of carbon dioxide, but CCS needs to be capturing 4 billion tons/yr by 2040 under the IEA's low-cost scenario for keeping the global temperature rise to just 2°C. Two EOR schemes have come on line this year — Saudi Arabia's Uthmaniyah EOR pilot project and Royal Dutch Shell's Quest project in Canada (PIW Nov.9'15). But many other plans have been scrapped, including the US' flagship FutureGen project in February, and Europe's most advanced CCS projects, the White Rose coal scheme and Shell's Peterhead gas venture in the UK, in November, following a shock withdrawal of \$1.5 billion in government funding. In Europe more broadly, "CCS is virtually dead," the IEA's head of CCS, Juho Lippinen, tells PIW.

EOR-linked CCS schemes benefit from a clear revenue stream, but for other CCS applications, strong government support and a robust carbon price are needed to spur investment. Without this, those companies that could use CCS to mitigate emissions — power generators, oil companies promoting gas as a transition fuel, or big industrial gas consumers with a heavy carbon footprint — have little incentive to take the technology to commercial-scale deployment. Unless coal and gas resource owners are faced with leaving it in the ground, "nothing will happen," former BP Executive Paul Bryant, now chief executive of clean energy firm Lyndon Energy, tells PIW. But government support seems to be waning, while such carbon pricing as is already in place around the world has not so far made CCS competitive, and means it is still cheaper to pollute (PIW Nov.30'15). Prices on the EU's struggling Emissions Trading System are languishing near €8.50 (\$9.20) per ton. Recent analysis by PIW sister publication *EI New Energy* suggests that even with reductions in construction and operating costs and improvement in efficiency, carbon prices of closer to \$50/ton would be needed to make CCS economically viable for coal- or gas-fired power (PIW Nov.23'15).

CCS remains the only option for mitigating fossil-fuel emissions in the power and industrial sectors, and the lack of attention it has received at the climate talks in Paris looks all the more alarming in light of the energy policy realities being spelled out by two of the world's biggest GHG emitters, China and India. Both countries say their economies need unabated coal use for the foreseeable future to meet rising demand. Indian officials in Paris said there would be no renewables without coal, a statement that puts into context India's well-publicized \$1 trillion solar power alliance with France. The government is aiming to install 100 gigawatts of solar capacity by 2022, up from 4 GW at present, but will rely on domestic coal production to fuel growth and improve access to electricity, Indian Energy Minister Piyush Goyal said (PIW Dec.7'15). China depends on coal for 70% of its electricity, but has pledged to cut pollutant emissions from coal-fired plants by 60% by 2020 to fight chronic air pollution. Yet Chinese officials admit funding CCS to help this target is challenging. Without an "adequate price for carbon and targeted incentives to offset higher capital investments and parasitic energy loss, there is hardly any economic driver for CCS," a recent Chinese CCS road map notes.

Opec Indecision Reflects Divisions Over Strategy

(Continued from p.1)

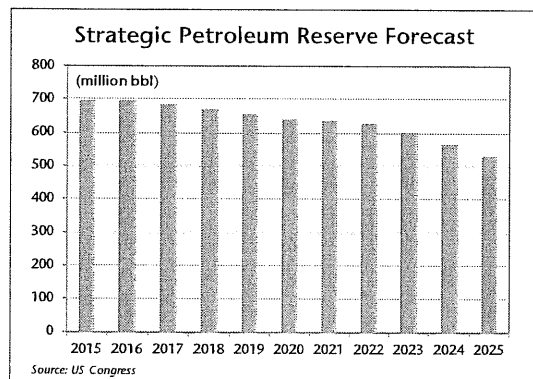
This was a reminder that Opec faces an internal as well as an external battle for market share, but also showed that the idea of market management has not been completely discarded by the group's Mideast Gulf members.

There are two broad camps on how Opec's long-term strategy should evolve. The first, held by delegates in many member states, believes there is still a role for collective output-cutting, but only once Opec's "market forces" approach has brought supply and demand closer to equilibrium, by denting the economics of high-cost production and stimulating demand. Once that has happened, be it in 2016, 2017 or even 2018, once Iran is back and non-Opec wounded, the main problem for Opec will be the inventory overhang. And it is then, the argument goes, that an Opec output cut could be effective in helping work off that surplus. Once markets are in better balance, Opec needs to cut output by 1 million-1.5 million b/d to create enough of a deficit to draw down stocks, says one Opec source who backs this approach. The thinking is that this should take the form of a series of small cuts, rather than one big headline-grabbing reduction. This would allow Opec to gauge the impact on US shale volumes from any improvement in prices, and adjust its approach as necessary. Small, gradual cuts would also be easier for Opec to manage internally.

The second camp, however, believes the current market approach — combined with a lot of patience — is all that is needed to rebalance the market in the short term, and could also form the basis of a new long-term Opec strategy, based on exploiting members' low-cost reserves to maintain production and marginalize high-cost non-Opec oil. Output cuts, they argue, would succeed only in further eroding Opec's market share, as higher prices let US tight oil return to the market. These delegates, who are fewer in number and come mainly from the Mideast Gulf, share a fairly bullish short-term market outlook, believing stocks could start being drawn down next year. They see demand growing by more than 1.2 million b/d and US shale falling by hundreds of thousands of barrels per day next year, removing the market surplus and even making space for Iran. By the end of 2016, their thinking goes, the market will be in much better shape and stocks will start coming off without any Opec cuts. Long-term acceptance of the market approach would have far-reaching implications for Opec — and, indeed, the oil industry as a whole — but also some long-term benefits for the producer group, some delegates argue, in obliging Opec states to start diversifying their economies away from dependence on oil.

US Plan to Tap SPR Raises Security Issues

With high US output, global oversupply and low oil prices, Washington conversations about energy security have assumed a different tone from years past: today's lawmakers are more inclined to argue authorizing US energy exports as a means of enhancing national security than they are to fret about the security of supply. Reflecting this more relaxed attitude, Congress has agreed to sell off about one-quarter of the Strategic Petroleum Reserve (SPR) over the next decade, using the state-owned emergency stocks as a way to fund US government operations (PIW Nov.27'15). Congress has approved three avenues for sales: around 40 million barrels to raise cash for modernizing the SPR's infrastructure, plus 58 million bbl to fund general government operations under the same budget deal; and 66 million bbl to raise cash under a highway and rail infrastructure bill. Under the transportation legislation signed by President Barack Obama this month, sales could begin this year, although they may be limited because prices are low and the Department of Energy (DOE) is required to "maximize the financial return" to taxpayers. Sales in earnest are more likely in the fiscal year that begins next October, when the DOE can begin funding the modernization of SPR infrastructure with up to \$2 billion worth of SPR sales spread over four years (see chart). The heaviest sales will begin in 2023, when the agency will sell off 26 million-35 million bbl per year through 2025.



Voices on all sides have advocated updating the SPR for more than a year since the Department of Energy (DOE) found it could not adequately distribute SPR barrels without displacing commercial volumes. Indeed, the sales provided for in the budget deal look to be the product of negotiation: the administration gets \$2 billion it says is necessary for the modernization projects, and Congress opens up a new source of funding without having to raise taxes (PIW Jul.27'15). The SPR's 695 million bbl are in four storage sites in Texas and Louisiana, but changes in US oil flows mean pipelines that may have carried SPR crude to inland refineries now run in the opposite direction. Moreover, the DOE argues it needs to do work in the salt caverns used to store the barrels.

There is a parallel debate about whether the strategic stocks should be "right-sized," with US Energy Secretary Ernest Moniz arguing that the

actual volume should be pegged to the likely scale of a global disruption rather than the International Energy Agency standard of 90 days-worth of net imports. The reality is that current SPR stocks are equivalent to 156 days worth of net crude imports, Energy Information Administration data shows. Last-minute negotiating saw the sales in the highway bill pared back from around 100 million bbl, which should keep the reserve just above the 530 million bbl level that allows a US president to authorize a statutory 30 million bbl release without the volumes falling below the required 500 million bbl floor. "With commercial stocks, what they are taking out of the SPR is probably not a major source of concern," says Benjamin Salisbury of FBR & Co.

Still, analysts remain concerned Congress acted before the DOE could consider whether to adjust the size, and warn that officials may be more reluctant in future to authorize releases from a smaller reserve to relieve shortages or spikes in pump prices. "What is a major concern is that this is a long term solution to a short term problem," says Salisbury. Another cause for concern is that an SPR pegged to the size of a potential disruption might actually need to be larger than the current iteration.

This is not the first time Congress has turned to the SPR to pay for government: a series of sales in 1996-97 helped plug budgetary holes as concerns over supply waned (PIW Jan.1'96). Five years later, the administration of George W. Bush expanded the SPR following the attacks of Sep. 11, 2001 regardless of increasing prices (PIW Mar.24'03). "We had to put costlier oil back in the SPR after Congress sold it back in 1996," says Bob McNally of Rapidan Group, a consulting firm. History may very well repeat itself.

Russia, Turkey Weigh Risks to Energy Ties

Turkey's Nov. 24 downing of a Russian fighter jet that allegedly entered its airspace has raised tensions between Ankara and Moscow, but has yet to have any real impact on a bilateral energy relationship that is vital for both sides. The stakes are too high — Russian state gas giant Gazprom could lose \$7 billion a year in sales if it shut down deliveries to Turkey, its second-biggest single customer after Germany, while Turkey depends on Russia for around 55%, or 29 billion cubic meters per year, of its gas supplies, transported under the Black Sea via the Blue Stream pipeline or via the overland Western Route pipeline through Ukraine and the Balkans. Moscow has introduced sanctions against Turkey, including bans on fruit and vegetable imports and charter flights between the two countries, as well as the cancellation of visa-free travel. It also intends to impose restrictions on some Turkish companies working in Russia (PIW Nov.30'15).

In the short term, Turkey may have the most to lose from any disruption to its energy relationship with Russia. Ankara intends to reduce its reliance on Russian gas to the EU level of around one-third of imports, and use coal and renewables to cut its overall dependence on gas, but such a transition is at least three years away. In the long term, however, it has plenty of options for diversifying its gas sources, thanks to the abundance of potential suppliers on its doorstep, including Azerbaijan, Turkmenistan, Iran and Iraq, and plentiful global supplies of cheap LNG (PIW May25'15). In the wake of last month's incident, Turkish President Recep Tayyip Erdogan has been quick to shore up these options, visiting Qatar in early December, where a long-term agreement on LNG was signed, with details to be fleshed out later. He also held talks in Azerbaijan, where both sides agreed to step up progress on the Tanap pipeline, which is scheduled to deliver Caspian gas to Turkey from 2018 and to Europe from 2020. Erdogan was also due to visit Turkmenistan, whose plentiful gas reserves could make a big difference, provided a way can be found to ship the gas to Turkey — perhaps overland via Iran, given staunch Russian opposition to a trans-Caspian pipeline. Turkey will find it harder to advance its nuclear options, however, as its joint project with Russia for the Akkuyu nuclear power plant is unlikely to make any progress in the current climate, despite having escaped Moscow's sanctions.

For Russia, however, Turkey is not just a gas customer, but also a gas transit route, and one it has been hoping to develop to eliminate its dependence on another transit state with whom relations have turned sour, Ukraine. But Moscow's decision to wind down government-to-government contacts with Ankara effectively wrecks Gazprom's Turk Stream gas pipeline project, which had been waiting on a now improbable intergovernmental agreement with Ankara. Turk Stream would have supplied Turkey first and then the EU market, and had been conceived both as a way of cutting Ukraine out of the transit loop to Europe, and bypassing the various EU objections that had scuttled the planned South Stream pipeline to Europe. By putting Turk Stream on ice, Gazprom is also serving notice that Turkey will not get a promised 10.25% price discount on existing supplies, over which Turkish state importer Botas filed an arbitration claim in October, before last month's jet incident. In the past, such issues would often have been sorted out on a political level between Putin and Erdogan, but the formerly strong personal relationship between the two leaders has descended into the exchange of insults and accusations.

Moscow has now been forced to shift its focus to Gazprom's newly-proposed Nord Stream-2 pipeline direct from Russia under the Baltic Sea to Germany. But Nord Stream-2, which now represents Russia's last chance to end the transit of its gas across Ukraine on the way to its key European market, is also coming under fire in Europe, and Gazprom could face the ignominy of having to extend its transit deal with Ukraine, which expires at the end of 2019, to ensure its gas gets to customers in Turkey and elsewhere (PIW Nov.9'15). One other potential victim of the row with Turkey could be Lukoil, Russia's second-biggest oil producer, which has a network of 700 retail stations in Turkey and a 10% share of the local market.

China Takes First Step in Pipeline Shake-Up

To general surprise, state China National Petroleum Corp. (CNPC) announced abruptly last month that it was selling a small part of its prized pipeline network, in the shape of listed subsidiary PetroChina's stake in the Central Asia-China natural gas pipeline system. At first glance, the divestment looks like a possible first step toward the long-anticipated establishment of a national pipeline operator, as part of Beijing's efforts to limit the power of China's national oil companies and create a more level playing field for private players. But the path toward such an objective is likely to be long and littered with obstacles, industry sources warn. Senior officials in PetroChina's own pipeline division say they were not consulted about the divestment, which sees its 50% stake in Trans-Asia Gas Pipeline Co. pass to an asset management company overseen by the State-Owned Assets Supervision and Administration Commission (Sasac). CNPC itself still holds the other 50% in Trans-Asia, which manages China's interests in long-distance pipelines carrying mainly Turkmen gas across Uzbekistan and Kazakhstan to China's northwestern Xinjiang region. A fourth pipeline within Trans-Asia that is still under construction was excluded from the deal.

The fact that PetroChina is, for now, only letting go of overseas pipelines points to parent CNPC's lingering reluctance to relinquish control over its near 80,000 kilometer domestic oil and gas pipeline network. Divestment of domestic midstream assets will be the next step, but establishing an independent pipeline operator under state control and granting greater midstream access to non-state players will take time, believes Michal Meidan, director of consultancy China Matters. While there is unlikely to be any practical change in operation of the Central Asia-China lines, the divestment marks "an initial concession to the government toward spinning off pipeline assets," Meidan says. But PetroChina has a reputation for dragging its feet — in May 2014 it promised to divest, via public tender, its entire stake in the eastern sections of its first two cross-country West-East pipelines, which take Central Asian gas on to China's eastern demand centers, but has still not done so (PIW May 19'15). Slow progress on reform of the company's pipeline business is believed to have contributed to the downfall of PetroChina's former vice chairman, Liao Yongyuan, who was detained on graft charges earlier this year (PIW Mar.23'15).

While the divestment was almost certainly made at the government's request, there are sound financial reasons for PetroChina to have carried out the sale — and indeed to pursue a broader sell-off of its pipelines. After a year that has seen its profits decimated by low oil prices, PetroChina will pocket 15 billion-15.5 billion yuan (\$2.34 billion-\$2.42 billion) from the sale, much to the relief of some investors, who had feared Beijing might simply strip PetroChina of the assets. A full spin-off of the company's pipeline network could raise as much as \$117 billion, estimates Sanford Bernstein analyst Neil Beveridge. Although the Sasac unit buying the stake is called China Reform Holdings Corp., one Trans-Asia source insists the sale has "nothing to do with reform" and was purely for economic reasons. The Central Asia-China pipeline system has a long payback period and thin profit margins, according to ratings agency Moody's. PetroChina's natural gas and pipeline business segment made a tidy operating profit of 25.38 billion yuan in the first nine months of this year, but could be in for a rough 2016 after the cuts in domestic gas prices announced by Beijing last month (PIW Nov.30'15).

Opinion remains divided on whether a national pipeline company will ever see the light of day. While it certainly looks to be a policy objective — the State Council, China's cabinet, called in September for separate transportation companies to be established as part of reforms of state-owned enterprises — it could be too complicated in practice given the contractual commitments faced by PetroChina and China's second-biggest pipeline operator Sinopec, both of which also have minority shareholders to consider. Mandatory third-party access looks a more plausible way of supporting private-sector energy players, says Li Yao, chief executive of consultancy SIA Energy. Others claim that while now may not be the best time, given ongoing construction projects, to establish a new pipeline firm, it will go ahead sooner or later, taking control of gas pipelines first, and could ultimately have as many as 100,000 employees.

What's New Around the World

GENERAL

CORPORATE — Exxon Mobil may be damaging its public image and missing an opportunity to be an oil industry leader in the discussion about global warming by counterattacking those who allege that the company misled the public and investors about climate risk. "Reactive and attack is just old school," says Steven Gaffney, a Washington-based corporate communications expert who has advised BP and dozens of other large clients. "Proactive honesty is a key way to establish trust. The strategy Exxon is using now is going to make it worse for the company, not better." New York Attorney General Eric Schneiderman started investigating Exxon's track record on disclosing risks associated with climate change to investors about a year ago (PIW Nov.30'15). Gaffney says that should have prompted the supermajor to start mobilizing its vast resources to work on enhancing its public image and reputation in this area, for example by joining its European peers in calling for a worldwide price on carbon.

COUNTRIES

AZERBAIJAN — State-owned Socar is struggling with the aftermath of a fire on one of its main offshore platforms on the shallow-water Guneshli field in the Caspian Sea, which is thought to have killed 30 workers. The fire broke out on Dec. 4 as a result of a violent storm that ruptured a high-pressure subsea gas pipeline connected to Platform 10 on the field. Although the blaze has caused a sharp drop in Socar's own oil production, with more than 20 wells shut down as a precaution, it has had no impact on the BP-operated Azeri-Chirag-Guneshli development, which accounts for more than 80% of the country's overall oil output of some 850,000 b/d (PIW Mar.30'15). Questions are likely to be asked about the adequacy of Socar's safety procedures.

CHINA — A combination of lower natural gas prices, choking smog and freezing temperatures will not be enough to prevent a gas surplus of almost 4 Bcm for China National Petroleum Corp. (CNPC) over the winter months, the state firm has said. CNPC expects demand of 65.3 Bcm from customers nationwide over the Nov. 15-Mar. 15 heating season, up 11% year-on-year due to colder weather. But it will have ample domestically produced and imported supply of 69.2 Bcm, which is up 18.3% on what it had available a year earlier. Industry sources report gas demand from power generators has not picked up in the three weeks since the government slashed city-gate gas prices by 28%, as coal remains much cheaper (PIW Nov.30'15). They say Beijing, embarrassed by the first "red alert" over smog levels in the capital from Dec. 8-10, will need to offer better financial incentives to persuade power producers to switch to gas.

EGYPT — BP has increased its interest in the \$12 billion West Nile Delta (WND) offshore gas development, which promises to play a vital role in meeting rising domestic gas demand and easing the energy crisis (PIW Dec.7'15). The UK major is acquiring an additional 22.75% in the North Alexandria Concession and 2.75% in the West Mediterranean Deep Water Concession from Germany's DEA, bringing BP's working interest in both concessions of the WND project to 82.75%. The WND project involves the development of 5 Tcf of gas and 55 million bbl of condensate. Production is expected to start in 2017 and reach a plateau by end-2019 of around 1.2 Bcf/d, equivalent to about 25% of the country's current gas production. All of WND's gas will go to the domestic market. Gas supply will be further enhanced by the development of Eni's 30 Tcf Zohr offshore discovery, which the Italian major is also now hoping to bring on stream in 2017.

KAZAKHSTAN — Production from the giant offshore Kashagan oil field will resume in late 2016 and should reach 13 million metric tons/yr (260,000 b/d) by 2020, according to Deputy Energy Minister Magzum Mirzagaliyev. Work to replace two parallel 90 km offshore pipelines that sprang a leak more than two years ago was running "ahead of schedule," Mirzagaliyev said. But industry sources believe mid-2017 is a more likely start-up date, due to the risks associated with cranking up facilities at the height of winter (PIW Jun.15'15). The delays and massive cost overruns have forced the government to scale down long-term oil production targets. Kashagan was originally forecast to produce more than 1 million b/d by 2020. The ongoing slump in oil prices has also raised questions over whether the project partners, which include Exxon Mobil, Royal Dutch Shell, Total and Eni, will ever be able to fully recover their costs. Capital outlays to date are already more than \$50 billion.

NIGERIA — President Muhammadu Buhari's government has produced a new draft of the long-delayed Petroleum Industry Bill (PIB) that provides for splitting state Nigerian National Petroleum Corp. into two separate entities, floating at least 30% of the firm's equity within six years, and selling assets to raise funds for operations. The bill, which is expected to be introduced in the Senate imminently, is shorter, less ambitious, and vaguer than the many previous versions, which could give it a better chance of clearing both houses. The draft does not cover tax reform and royalties, which are expected to be covered in separate legislation, instead focusing on a new governance and institutional framework and laying legal foundations for tackling the oil sector's perennial funding problems (PIW Apr.13'15).

Oil Supply Up Again in November

Global oil supply climbed by another 247,000 b/d to reach a record 98.412 million b/d in November, according to preliminary PIW soundings, taking the surplus in global oil markets to more than 3 million b/d.

Non-Opec supply was up by 206,000 b/d from October, while Opec crude output rose by 137,000 b/d to reach 32.085 million b/d. Angola posted the biggest month-on-month Opec gain, up by 178,000 b/d to a year-high 1.737 million b/d, while Iraq added 140,000 b/d to reach 4.389 million b/d (PIW Nov.30'15).

Nigeria did less well with output relatively stagnant at 1.938 million b/d, excluding offshore condensates from the Agbami and Akpo fields. Some of the recent gains for Nigerian lighter crudes have been at the expense of US light, tight oil being put into storage to take advantage of the contango in the WTI market (PIW Dec.7'15).

Global Oil Supply

('000 b/d)	Nov '15	Oct '15	Chg. vs. Oct '14
Americas	22,578	22,508	+576
United States	9,542	9,471	+486
Canada	3,693	3,588	+194
Venezuela	2,388	2,423	+25
Mexico	2,264	2,278	-98
Brazil	2,325	2,406	+13
Colombia	1,066	1,054	+53
Ecuador	543	538	-14
Europe	3,186	3,087	+206
Norway	1,638	1,567	+64
UK	963	946	+193
Middle East	25,017	24,959	+2,150
Saudi Arabia*	10,300	10,276	+782
Iran	2,929	2,919	+388
Iraq	4,389	4,249	+1,032
Kuwait*	2,800	2,800	+122
UAE	2,850	2,971	+159
Qatar	652	660	-28
Neutral Zone	0	0	-345
Africa	7,488	7,326	+297
Nigeria	1,938	1,943	+314
Libya	440	465	-463
Algeria	1,118	1,145	-57
Angola	1,737	1,559	+440
Egypt	654	656	+17
South Sudan	189	162	-7
Far East	7,451	7,489	+49
China	4,012	4,073	-211
Indonesia	757	741	-15
Ex-USSR	13,185	13,312	-168
Russia	11,077	11,141	+11
Opec NGL/			
Condensates	6,469	6,565	+19
Opec Other	275	275	+6
Non-Opec NGL	6,816	6,763	+312
Non-Opec Other	3,597	3,560	+479
Total World	98,412	98,165	+3,942
Non-Opec	59,584	59,378	+1,562
Opec Wellhead	32,085	31,948	+2,355
Opec-11	27,696	27,699	+1,323

*Excludes Neutral Zone shares shown separately.

Marketview

Short and Shorter

NEW YORK — Oil prices have traded steadily lower in the days since Opec's Dec. 4 meeting, which did little more than affirm the current production free-for-all among members in pursuit of greater market share. For the market, that means Opec can be expected to continue pumping at current levels of around 32 million barrels per day, with additions looming from Iran once Western sanctions are lifted (PIW Dec. 7'15).

Before the meeting, money managers — the regulatory term for banks and hedge funds trading futures — had been adding to their short positions. Now that Opec has reinforced the prospect of the supply surplus extending well into 2016, the question is whether and to what extent financial players will continue going short, and in doing so put more pressure on oil prices.

How speculators position themselves can have a big effect on oil prices. In August, players went short as inventories rose and prospects improved for a revival in Iranian exports. But they then had to cover these short positions by buying futures when prices fell to new lows, helping trigger a \$10/bbl price rebound in the space of just a few sessions (PIW Sep. 7'15).

Across Brent and West Texas Intermediate (WTI) futures and options on ICE and Nymex, managed money now holds a new record of nearly 360,000 short contracts, equivalent to 360 million paper barrels and well above the August high of 326,000. And lower prices over the past week suggest more shorts are piling in, particularly in WTI.

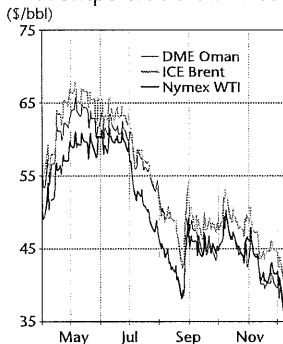
In contrast to August, analysts are this time not expecting a short-covering rally, with those holding short positions helped in this instance by the contango in crude markets. "Given the current underlying fundamental picture and the massive contango nature of the WTI — and to a certain extent the Brent — market, currently there is no

incentive [cover shorts], as not only are lower prices expected, but shorts are able to make extra profit when rolling their positions from the front-month to the next," said Tamas Varga of brokers PVM. The wider contango is more apparent in Nymex crude futures, where the discount between the first and second contract months has more than doubled from roughly 62¢ in late August to \$1.45/bbl at the start of December.

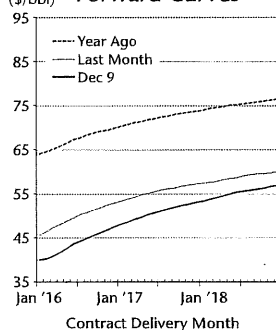
While selling has so far outweighed buying, speculators still hold net long positions in both Brent and WTI, which could also guard against another bounce. Net speculative length in Brent — long positions minus short positions — is higher than it was back in August, even with Brent last week slipping below \$40/bbl. That gives speculators room for more short bets. In WTI, net speculative length is plummeting, but investors still hold a substantial amount of WTI through the USO exchange traded fund, analysts note. "Overall, there may be some risk of a sharp short-

covering spike like the one we saw in late August, but I don't see the wider market as heavily skewed," noted Tim Evans of Citi Futures.

Prompt Crude Oil Prices



ICE Brent Forward Curves



NOC Hopeful of Boost to Libya's Oil Output

Libya's crude output remains at just 400,000 b/d, a senior official with state National Oil Corp. (NOC) told PIW last week, as the UN seeks a political solution to the country's civil war (PIW Nov. 9'15).

NOC downstream chief Jadalla Jadalla said he hoped news of a political deal in early December could see the reopening of the El-Sharara and Elephant fields, which could bring on stream roughly 480,000 b/d of additional crude capacity. One problem is that valves on pipelines running from both fields to oil terminals in the west had been filled with cement by rival militias aiming to halt crude exports. El-Sharara has capacity of 340,000-350,000 b/d, while Elephant has 130,000 b/d.

Rival governments are competing for legitimacy, but parliamentarians from Libya's internationally recognized House of Representatives in the eastern town of Tobruk last week signed a declaration of principles with lawmakers from the former General National Congress in Tripoli with a view to ending the conflict.

PIW Market Indicators

(\$/barrel)	Dec 7-	Nov 30-	Nov 9-
Spot Crude	Dec 9	Dec 4	Nov 13
Opec Basket	\$35.05	\$38.53	\$41.08
UK Brent (Dtd.)	39.38	42.40	44.69
US WTI (Cushing)	37.37	40.35	42.65
Lt. Louisiana Swt.	39.14	42.02	44.28
Nigeria Bonny Lt.	39.54	42.55	44.91
Dubai Fateh	36.82	39.99	42.47
US Mars	34.90	37.54	39.68
Russia Urals (NWE)	37.30	40.58	40.95
Oman	38.02	41.43	44.92
ESPO	41.38	44.62	47.80
Bakken	35.80	38.87	41.85

Crude Futures			
Brent 1st (ICE)	40.37	43.68	45.62
Brent 2nd (ICE)	40.71	44.28	46.46
B-wave (ICE)	40.95	44.03	46.17
WTI 1st (Nymex)	37.44	40.90	42.70
WTI 2nd (Nymex)	39.01	42.27	43.96
Oman 1st (DME)	35.55	39.34	42.52
Oman 2nd (DME)	36.54	40.36	43.64

Forward Spreads			
Brent (1st-Dtd.)	+\$0.99	+\$1.27	+\$0.94
Brent (2nd-1st)	+0.34	+0.61	+0.84
WTI (2nd-1st)	+1.57	+1.37	+1.26
WTI (3rd-2nd)	+1.22	+1.06	+0.95
Oman (2nd-1st)	+0.99	+1.02	+1.12
Oman (3rd-2nd)	+0.92	+0.85	+0.63

Grade Differentials			
WTI-Brent (1st)	-\$2.93	-\$2.78	-\$2.92
WTI-LLS	-1.77	-1.67	-1.63
WTI-Mars	+2.47	+2.81	+2.97
Brent(Dtd)-Dubai	+2.56	+2.41	+2.22
Brent(Dtd.)-Urals	+2.08	+1.82	+3.73
Brent(Dtd.)-Bonny Lt.	-0.16	-0.15	-0.22

Term Crude Formulas			
Arab Lt.-US (cif)	\$36.83	\$39.47	41.81
Arab Lt.-Europe (Med)	38.10	41.18	41.72
Arab Lt.-Far East (fob)	36.12	39.41	42.09
Nigeria Bonny Lt.	39.38	42.40	45.20

Arab Light Gross Product Worth			
Rotterdam	\$40.34	\$43.74	\$47.86
US Gulf Coast	40.11	42.95	46.12
Singapore	43.60	46.67	49.23

Gross Product Worth & Margins			
Rotterdam			
UK Brent GPW	\$42.89	\$46.14	\$50.64
UK Brent Margin	+2.30	+2.51	+4.65
US Gulf Coast			
Mars GPW	38.21	41.08	44.12
Mars Margin	+3.21	+3.44	+4.34
Singapore			
Oman GPW	42.86	45.95	48.54
Oman Margin	+3.13	+2.96	+2.36
US Nymex			
WTI 3-2-1 Crack	+\$14.21	+\$14.75	+\$14.27

Refined Products			
Rotterdam (\$/ton)			
Eurobob Gasoline	\$411.33	\$440.40	\$487.00
Gasoil (0.1%)	349.33	384.45	426.00
Fuel Oil (1%)	152.33	176.20	191.75
US Gulf Coast (\$/gal)			
RBOB Gasoline	113.00¢	119.01¢	122.63¢
ULS Diesel	115.56	123.86	137.64
Fuel Oil (0.7%, \$/bbl)	\$30.85	\$34.63	\$38.13
Singapore (\$/bbl)			
Naphtha	\$46.18	\$48.86	\$48.72
Gasoil (0.05%)	50.49	54.20	57.98
Fuel Oil (3.5%, \$/ton)	189.24	211.67	233.17

Latest week's data are preliminary. For GPW and margin calculations, see Refining Profitability Methodologies on the Energy Intelligence website in Reference Tools Publication Methodologies. Spot prices from Thomson Reuters. Opec basket source, Opecna. 3-2-1 crack spread for 3 parts crude, 2 parts gasoline, and 1 part heating oil. PIW Numerical Datasource subscribers can download all indicators in Excel worksheets.

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Crude Oil Exports Boom From Opec and Non-Opec

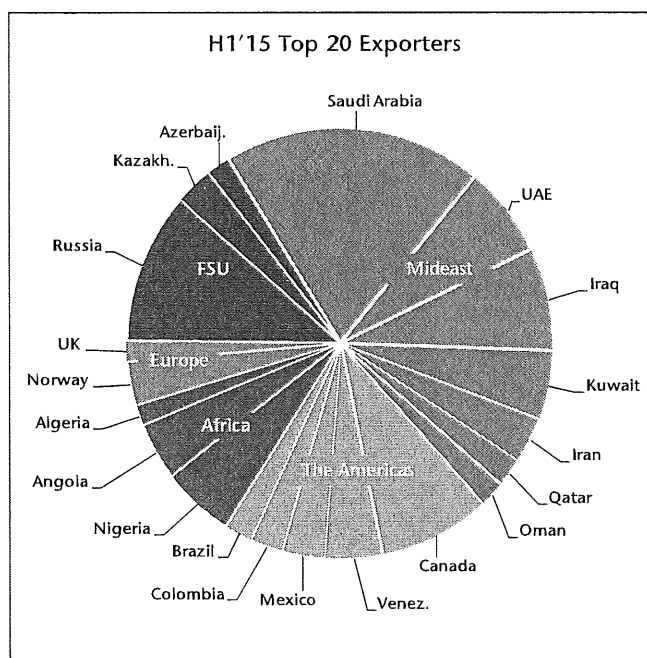
Opec's year-old policy of defending market share rather than price levels has ignited a boom in international crude oil trade, with export volumes jumping almost 1.6 million barrels per day in the first half of this year as compared to the second half of 2014. This competitive surge in crude oil trade contrasts with steady to declining volumes of 2013 and 2014, demonstrating clearly that there has been a structural shift in oil market volumes as well as price this year. The 5% jump in the volume of crude oil trade is more than double the rate of oil demand growth and helps explain the magnitude of the current glut (PIW Jun.8'15). This PIW special supplement breaks down import-export data from the world's top 20 crude oil buyers and top 20 sellers during a crucial time in the industry as Opec seeks to regain market share and the strength of non-Opec output is being put to the low-price test. While year-on-year comparisons are valuable here, a sequential look beginning in 2014 is also helpful, as it offers a better view of evolving sales strategies as producers push and pull for market share. The tables here show crude oil exports and imports by the top 20 countries in each category in the first half of 2015 and the first half of 2014 as well as the comparative year-on-year change. The data come primarily from government sources with some adjustments by PIW.

The big increase in crude oil exports in the first half of the year comes from Opec producers and non-Opec producers alike. In fact, fully eight of the top 10 crude oil exporters

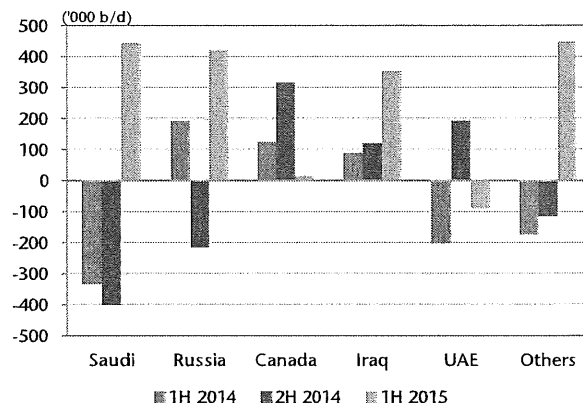
managed to increase crude sales, helping explain the steep decline in prices and the failure of the second-quarter oil market recovery to stick. With Iran now poised to join the party and expand exports by as much as another 1 million b/d in 2016, downward price pressure seems likely to remain firmly in place. Although this year's biggest exporters have managed some impressive volume increases, none has been able to boost sales enough to come close to overcoming the decline in revenues due to lower oil prices. By contrast, Iran, with about a 50% increase in exports planned, may be able to offset more of the price decline with increased volumes or at least better withstand a further erosion in price levels, making it virtually certain that it will attempt to boost exports as much as it can, provided sanctions are lifted. Thus Iran's return sets the stage for an intensification of the competitiveness of crude trade next year (PIW Oct.12'15).

In the first half of 2015, Saudi Arabia was the winner in terms of increased export volumes as compared to second-half 2014, solidly ahead of the gains scored by Russia, Canada, Iraq and other top 20 exporters. This comes after a huge erosion of its export position over the course of 2014, which helps explain its adoption of a market share strategy. In the first half of this year, Saudi sales jumped to the top 20 importers by 443,000 b/d and by 545,000 b/d to all countries versus second-half 2014 levels. This follows a drop in its total crude oil exports of over 700,000 b/d in the course of 2014, so it still has not regained all of its lost ground. The big drop was dominated by a loss of almost 500,000 b/d of exports to the US, with about 86,000 b/d of that regained in the first half of this year. Meanwhile, shipments from the second-biggest exporter, Russia,

(Continued on p.6)



Changes in Export Volumes to Top 20 Importers, 2014-15



TOP 20 CRUDE OIL EXPORTERS/IMPORTERS

FIRST-HALF 2015 EXPORTERS

	(⁰⁰⁰ b/d)	S. Arabia	Russia	Canada	Iraq	UAE	Nigeria	Kuwait	Venezuela	Angola	Iran	Norway
IMPORTERS	US	1040.0	11.7	3132.3	201.1	3.4	35.7	250.6	751.1	94.0	—	6.5
	China	1068.5	786.0	5.0	625.2	237.7	15.9	279.5	297.0	770.0	591.9	—
	India	765.7	5.8	1.8	594.6	306.3	425.0	302.3	453.1	200.7	216.5	—
	Japan	1116.7	297.1	—	37.2	871.9	—	270.2	5.8	—	106.0	—
	Korea	914.5	122.3	—	323.9	252.7	4.4	361.6	—	—	119.4	—
	Germany	33.7	645.3	—	20.7	0.4	138.2	0.3	4.4	11.6	—	252.8
	Spain	143.5	135.5	8.5	52.2	—	204.1	—	67.1	123.8	—	36.8
	Italy	113.6	175.8	—	194.7	—	45.6	3.4	—	48.0	—	3.8
	France	241.2	104.4	—	47.1	5.3	131.3	4.9	—	80.6	—	67.8
	Neth.	106.3	336.7	2.0	65.3	7.7	123.1	69.5	0.7	41.8	—	153.0
	Taiwan	281.3	—	—	84.1	82.0	—	182.6	—	74.8	10.7	—
	UK	26.6	30.8	14.0	4.6	—	81.1	1.1	8.8	69.2	—	389.6
	Thailand	163.1	36.3	—	—	328.0	3.7	9.0	—	5.2	—	—
	Singapore	164.2	17.9	—	85.2	232.6	1.0	97.9	—	—	—	—
	Belgium	179.4	203.3	4.7	6.4	—	86.9	10.6	4.3	24.0	—	69.3
	Canada	79.4	—	—	—	—	53.1	—	2.8	23.1	—	24.7
	Poland	—	458.6	—	28.4	—	—	—	—	—	—	5.3
	Turkey	60.3	30.4	—	187.1	—	21.5	—	—	—	117.2	—
	Greece	49.1	79.2	—	172.5	—	—	—	—	—	—	—
	Sweden	—	166.4	—	2.6	—	37.7	—	28.9	—	—	93.0
	Sum top 20	6,546.9	3,643.7	3,168.4	2,733.0	2,328.1	1,408.1	1,843.5	1,623.9	1,566.8	1,161.7	1,102.6
	Others	913.8	716.3	67.8	190.4	290.0	691.0	121.7	42.1	81.0	159.2	145.8
	Total	7,460.6	4,360.0	3,236.3	2,923.4	2,618.1	2,099.0	1,965.2	1,666.0	1,647.9	1,320.9	1,248.4

(continued p3)

FIRST-HALF 2014 EXPORTERS

	(⁰⁰⁰ b/d)	S. Arabia	Russia	Canada	Iraq	UAE	Nigeria	Kuwait	Venezuela	Angola	Iran	Norway
IMPORTERS	US	1358.7	9.2	2730.3	340.9	5.8	84.9	366.7	722.2	122.1	—	17.7
	China	978.8	621.0	3.2	562.0	218.6	49.2	156.6	317.7	843.1	630.3	—
	India	725.2	—	11.1	489.4	269.9	335.5	336.8	266.7	157.3	286.7	—
	Japan	1120.2	280.1	—	34.9	830.9	5.6	251.2	5.2	5.5	117.6	2.0
	Korea	776.7	97.8	—	188.4	277.0	2.3	376.6	—	—	124.7	—
	Germany	25.9	591.1	—	13.6	—	139.1	4.5	0.3	8.3	—	296.2
	Spain	148.1	193.3	3.2	30.5	—	187.3	—	56.8	97.8	—	13.5
	Italy	112.0	164.7	46.3	106.4	—	48.8	4.9	—	35.7	—	10.8
	France	224.4	122.3	—	23.3	5.5	141.9	5.6	—	20.9	—	68.0
	Neth.	74.3	262.6	—	16.7	—	92.7	55.3	28.4	10.8	—	146.5
	Taiwan	280.1	—	—	109.4	74.4	10.3	155.8	—	83.7	—	—
	UK	20.5	39.2	35.8	—	—	106.3	—	10.5	6.9	—	400.1
	Thailand	152.7	68.7	—	—	274.6	24.1	4.7	—	5.6	—	—
	Singapore	234.7	17.1	2.2	39.5	265.3	—	75.2	—	5.3	—	—
	Belgium	130.1	245.0	1.1	3.0	—	92.7	9.2	10.5	14.3	—	61.2
	Canada	61.0	—	—	64.1	—	21.2	—	—	19.7	—	51.1
	Poland	—	434.4	—	—	—	—	—	—	—	—	—
	Turkey	43.0	18.1	—	93.4	—	23.9	—	—	—	104.5	—
	Greece	37.3	103.9	—	139.5	—	—	—	—	—	—	—
	Sweden	—	166.4	—	—	—	43.0	—	20.9	3.0	—	100.7
	Sum top 20	6,503.5	3,435.1	2,833.2	2,255.0	2,222.1	1,408.9	1,803.1	1,439.3	1,440.0	1,263.8	1,167.9
	Others	785.2	679.9	81.8	239.0	293.2	655.8	197.7	49.3	118.2	200.8	138.2
	Total	7,288.6	4,115.0	2,915.0	2,494.0	2,515.3	2,064.7	2,000.8	1,488.6	1,558.2	1,464.6	1,306.1

(continued p3)

FIRST-HALF CHANGE 2015 vs. 2014

	(⁰⁰⁰ b/d)	S. Arabia	Russia	Canada	Iraq	UAE	Nigeria	Kuwait	Venezuela	Angola	Iran	Norway
FIRST-HALF CHANGE 2015 vs. 2014	US	-318.7	2.5	402.0	-139.8	-2.4	-49.2	-116.1	28.8	-28.1	—	-11.2
	China	89.7	165.1	1.8	63.2	19.1	-33.3	122.9	-20.7	-73.1	-38.4	—
	India	40.4	5.8	-9.3	105.2	36.4	89.5	-34.5	186.4	43.5	-70.2	—
	Japan	-3.5	17.0	—	2.3	41.0	-5.6	19.1	0.5	-5.5	-11.6	-2.0
	Korea	137.8	24.5	—	135.5	-24.3	2.0	-15.0	—	—	-5.3	—
	Germany	7.8	54.2	—	7.0	0.4	-0.9	-4.2	4.1	3.3	—	-43.4
	Spain	-4.6	-57.7	5.4	21.7	—	16.8	—	10.3	26.1	—	23.2
	Italy	1.6	11.0	-46.3	88.3	—	-3.2	-1.5	—	12.4	—	-7.0
	France	16.8	-17.9	—	23.7	-0.2	-10.6	-0.7	—	59.7	—	-0.2
	Neth.	32.0	74.0	2.0	48.6	7.7	30.4	14.3	-27.7	30.9	—	6.4
	Taiwan	1.2	—	—	-25.3	7.6	-10.3	26.7	—	-8.9	10.7	—
	UK	6.1	-8.4	-21.9	4.6	—	-25.2	1.1	-1.7	62.3	—	-10.5
	Thailand	10.4	-32.5	—	—	53.4	-20.4	4.3	—	-0.4	—	—
	Singapore	-70.4	0.9	-2.2	45.8	-32.7	1.0	22.7	—	-5.3	—	—
	Belgium	49.2	-41.7	3.7	3.4	—	-5.9	1.4	-6.2	9.7	—	8.2
	Canada	18.4	—	—	-64.1	—	31.9	—	2.8	3.4	—	-26.4
	Poland	—	24.2	—	28.4	—	—	—	—	—	—	5.3
	Turkey	17.3	12.2	—	93.8	—	-2.4	—	—	—	12.7	—
	Greece	11.8	-24.7	—	33.0	—	—	—	—	—	—	—
	Sweden	—	—	—	2.6	—	-5.3	—	8.0	-3.0	—	-7.7
	Sum top 20	43.4	208.6	335.2	478.0	106.0	-0.8	40.4	184.6	126.8	-102.1	-65.3
	Others	128.6	36.4	-14.0	-48.6	-3.2	35.1	-76.0	-7.3	-37.1	-41.6	7.6
	Total	172.0	245.0	321.2	429.3	102.8	34.3	-35.6	177.4	89.7	-143.7	-57.7

Sources: International Energy Agency, Joint Oil Data Initiative (Jodi), Nefte Compass, customs data, and Energy Intelligence estimates.

(continued p3)

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Special Supplement Page 3

TOP 20 CRUDE OIL EXPORTERS/IMPORTERS

FIRST-HALF 2015 EXPORTERS												
('000 b/d)	Mexico	Kazakh.	Colombia	Qatar	Brazil	Oman	Azerbaij.	Algeria	UK	Sum Top 20	Others	Total
US	715.4	—	423.2	—	176.3	—	5.8	5.8	15.7	6,868.6	399.4	7,268.0
China	16.1	122.2	180.9	10.8	250.2	580.0	—	2.1	11.5	5,850.4	765.4	6,615.8
India	119.9	5.4	51.4	61.9	71.7	5.6	16.5	5.1	7.5	3,617.1	326.4	3,943.6
Japan	33.7	5.9	27.1	212.2	—	20.2	—	—	—	3,004.1	224.3	3,228.3
Korea	33.0	25.1	5.2	368.5	—	0.8	—	—	59.5	2,590.9	193.7	2,784.6
Germany	8.7	119.4	5.9	—	0.4	—	120.0	75.0	224.3	1,661.0	193.4	1,854.4
Spain	175.2	—	68.3	—	33.1	—	31.5	54.6	21.9	1,156.2	117.1	1,273.3
Italy	5.6	105.2	16.9	—	—	—	216.0	17.1	10.0	955.6	264.0	1,219.6
France	27.2	171.7	1.1	—	—	—	69.7	80.1	26.9	1,059.2	98.5	1,157.7
Neth.	15.6	—	5.3	—	2.6	—	—	40.1	68.4	1,038.0	39.8	1,077.8
Taiwan	—	—	—	—	—	106.5	—	—	—	822.0	48.6	870.6
UK	2.7	—	—	—	—	—	—	153.4	—	781.8	45.6	827.4
Thailand	—	—	1.6	50.5	—	27.6	11.8	—	—	636.7	181.1	817.7
Singapore	—	—	1.1	92.2	—	2.9	—	—	—	695.1	105.9	801.1
Belgium	4.1	—	2.7	—	0.6	—	3.3	0.9	21.9	622.2	27.5	649.7
Canada	—	3.5	6.6	—	5.5	—	—	38.6	7.3	244.6	372.2	616.8
Poland	—	12.1	—	—	—	—	—	—	—	504.4	8.0	512.5
Turkey	—	19.5	11.5	—	—	—	—	—	—	447.5	6.1	453.6
Greece	—	59.8	—	—	—	—	6.8	—	—	367.4	41.3	408.7
Sweden	—	—	—	—	—	—	—	—	5.7	334.4	41.1	375.5
Sum top 20	1,157.3	649.7	808.9	796.2	540.4	743.4	481.4	472.7	480.6	33,257.2	3,499.4	36,756.7
Others	55.3	450.3	103.7	28.7	250.5	—	190.8	126.7	88.5	4,713.6	—	—
Total	1,212.7	1,100.0	912.6	825.0	790.9	743.4	672.1	599.4	569.1	37,970.9	—	—

IMPORTERS

FIRST-HALF 2014 EXPORTERS												
('000 b/d)	Mexico	Kazakh.	Colombia	Qatar	Brazil	Oman	Azerbaij.	Algeria	UK	Sum Top 20	Others	Total
US	790.7	—	280.3	—	105.1	—	11.6	8.3	8.6	6,963.1	347.8	7,311.0
China	14.0	135.4	194.3	5.6	107.2	587.4	9.0	31.0	27.7	5,491.9	662.1	6,154.0
India	82.4	21.9	130.1	136.1	85.6	19.2	33.0	2.7	3.3	3,392.9	368.5	3,761.4
Japan	11.3	—	—	256.6	—	55.4	—	—	—	2,976.7	378.8	3,355.5
Korea	—	17.5	6.0	234.0	—	10.4	—	4.3	113.8	2,229.7	229.9	2,459.6
Germany	7.0	145.4	25.4	—	11.3	—	71.8	71.2	226.8	1,638.0	130.4	1,768.4
Spain	173.3	6.5	76.4	—	11.1	—	21.7	56.0	16.5	1,091.8	88.1	1,179.9
Italy	16.6	88.0	23.5	—	—	—	197.1	24.1	9.9	888.8	155.9	1,044.7
France	3.0	135.6	—	—	—	—	59.8	63.9	10.8	885.1	128.7	1,013.8
Neth.	8.7	—	10.1	—	2.1	—	—	34.5	127.6	870.4	68.9	939.3
Taiwan	—	—	—	—	—	81.8	—	—	—	795.5	81.4	876.9
UK	—	—	—	—	—	—	—	122.1	—	741.5	139.6	881.0
Thailand	—	—	—	40.5	—	39.3	27.0	18.1	5.6	660.7	133.9	794.7
Singapore	—	—	3.4	111.9	—	18.4	—	—	2.5	775.5	38.9	814.3
Belgium	6.1	—	11.2	—	0.0	—	3.4	—	33.9	621.7	14.6	636.3
Canada	7.9	—	5.6	—	5.7	—	—	37.2	8.4	282.0	280.8	562.8
Poland	—	10.9	—	—	—	—	—	—	6.4	451.6	1.6	453.2
Turkey	—	26.8	—	—	—	—	—	—	7.1	316.9	5.7	322.6
Greece	—	52.8	—	—	—	—	6.6	—	—	340.0	41.2	381.2
Sweden	—	—	—	—	—	—	—	—	3.0	337.0	23.9	361.0
Sum top 20	1,121.1	640.8	766.4	784.6	328.0	811.9	440.8	473.5	611.8	31,750.7	3,320.7	35,071.4
Others	33.9	409.2	98.2	2.6	165.6	—	252.6	82.8	61.5	4,545.6	—	—
Total	1,155.0	1,050.0	864.6	787.2	493.7	811.9	693.4	556.3	673.3	36,296.4	—	—

IMPORTERS

FIRST-HALF CHANGE 2015 vs. 2014												
('000 b/d)	Mexico	Kazakh.	Colombia	Qatar	Brazil	Oman	Azerbaij.	Algeria	UK	Sum Top 20	Others	Total
US	-75.3	—	142.8	—	71.2	—	-5.8	-2.5	7.1	-94.5	51.6	-43.0
China	2.2	-13.2	-13.4	5.2	143.0	-7.4	-9.0	-28.9	-16.2	358.5	103.3	461.8
India	37.5	-16.4	-78.6	-74.2	-13.9	-13.6	-16.5	2.4	4.3	224.2	-42.1	182.1
Japan	22.4	5.9	27.1	-44.3	—	-35.3	—	—	—	27.4	-154.5	-127.1
Korea	33.0	7.6	-0.8	134.5	—	-9.7	—	-4.3	-54.3	361.2	-36.2	325.0
Germany	1.7	-26.0	-19.5	—	-10.9	—	48.3	3.8	-2.5	23.1	63.0	86.1
Spain	1.9	-6.5	-8.1	—	22.0	—	9.9	-1.4	5.4	64.4	29.0	93.3
Italy	-11.0	17.2	-6.6	—	—	—	18.9	-7.0	0.2	66.8	108.1	174.9
France	24.3	36.0	1.1	—	—	—	9.8	16.2	16.1	174.1	-30.1	143.9
Neth.	6.8	—	-4.7	—	0.5	—	—	5.5	-59.2	167.6	-29.1	138.5
Taiwan	—	—	—	—	—	24.6	—	—	—	26.5	-32.8	-6.3
UK	2.7	—	—	—	—	—	—	31.3	—	40.4	-94.0	-53.6
Thailand	—	—	1.6	10.0	—	-11.7	-15.2	-18.1	-5.6	-24.1	47.1	23.1
Singapore	—	—	-2.3	-19.7	—	-15.6	—	—	-2.5	-80.3	67.1	-13.3
Belgium	-2.0	—	-8.5	—	0.6	—	-0.1	0.9	-12.1	.6	12.9	13.5
Canada	-7.9	3.5	1.0	—	-0.2	—	—	1.4	-1.1	-37.3	91.4	54.0
Poland	—	1.3	—	—	—	—	—	—	-6.4	52.8	6.4	59.2
Turkey	—	-7.3	11.5	—	—	—	—	—	-7.1	130.5	.4	131.0
Greece	—	7.0	—	—	—	—	0.2	—	—	27.4	.1	27.5
Sweden	—	—	—	—	—	—	—	—	2.7	-2.6	17.2	14.5
Sum top 20	36.2	8.9	42.6	11.6	212.4	-68.5	40.5	-0.8	-131.2	1,506.5	178.7	1,685.2
Others	21.4	41.1	5.5	26.2	84.9	—	-61.8	43.9	27.0	168.0	—	—
Total	57.7	50.0	48.0	37.8	297.2	-68.5	-21.3	43.1	-104.2	1,674.5	—	—

FIRST-HALF CHANGE 2015 vs. 2014

Sources: International Energy Agency, Joint Oil Data Initiative (Jodi), Nefte Compass, customs data, and Energy Intelligence estimates.

(Continued from p.1)

also grew in the first half of 2015 compared to second-half 2014, when they had slumped too, much like Saudi Arabia.

In the first half of this year, Saudi Arabia has managed to more than replace all of its lost export volumes to all of its main importers except the US. While Saudi sales to esoteric markets such as Poland and Sweden have grabbed headlines, it is actually in its primary Asian markets of China, India, Japan and South Korea that it has made the lion's share of its comeback. Sales to these four core Asian countries jumped by 50,000-100,000 b/d each for a total rise of 319,000 b/d from second-half 2014. Even on a year-on-year basis, Saudi exports rose in 14 of 18 importing countries in the top 20. The gains in Saudi exports are widespread and reflect a combination of easier term contract price formulas and careful courting of key term contract customers.

Iraq has also made a huge leap in exports, and its gains have come mainly in sales to Asia and Europe. Since first-half 2014, its exports are up 429,000 b/d to just under 3 million b/d. Nearly all of this has come on line this year, with only a marginal boost over the course of 2014. Long before Opec officially took its hands off the oil taps, Iraq's ambitions were clear, and from its point of view, justified from the volume losses it suffered in the past. But in today's highly competitive environment, no one has stepped aside to accommodate the extra oil.

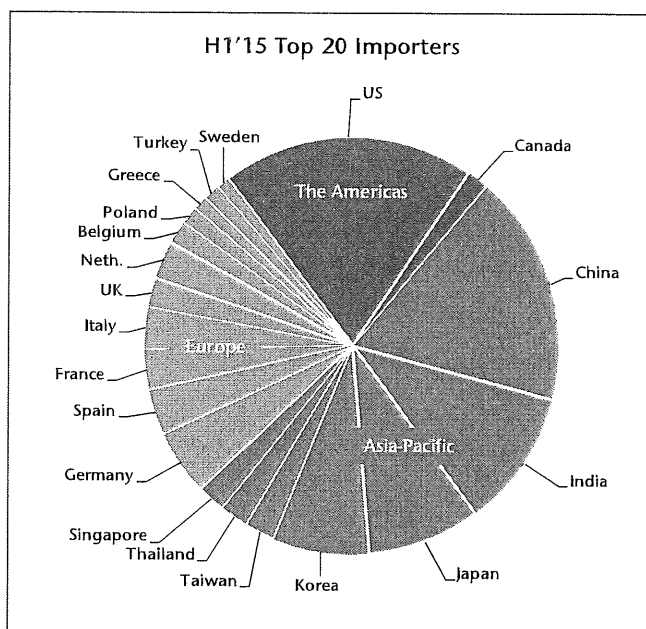
Major export growth also came in the Western Hemisphere, where Canada and Brazil have boosted shipments by a combined 618,000 b/d during the first half of 2015 compared to the same time a year ago, or some 40% of the incremental

boost in global oil exports. Almost all of the Canadian oil was predictably sent into the US, but increased Brazilian exports went to both the US and Asia, where Mideast Opec producers are locking horns for market share (p1).

Despite concern about its oil demand growth, China's crude imports are up nearly 462,000 b/d from year-ago levels in the first half of 2015 at an average of 6.62 million b/d. Thus far in the second half, China's appetite appears to be holding

up, averaging an increase of 650,000 b/d on the year. The data for July through October comes with the warning that month-on-month import swings can be volatile. While concern builds over the country's broader macroeconomic health, and what that means for oil demand and imports, analysts still see room for another year of average growth in imports on either side of 500,000 b/d for 2016. In addition to China, South Korea has proven to be a particularly strong source of Asian crude import growth this year.

Although the US is still the largest crude importer, taking in about 600,000 b/d more than China in the first half of



the year, its volumes continue to slip and, perhaps more importantly, Canada is grabbing an even larger share of the US market. Canada now provides for 43% of US crude oil imports at over 3.1 million b/d, which is up from a 34% market share as recently as the second half of 2013. With US shale oil production growth now past its peak and set to slide in 2016, Canadian supplies could well fill most of the gap, leaving relatively little scope for non-North American barrels to regain the markets lost in the US in recent years and adding further to the competition on global crude markets next year.

